

Characteristics of Lower Duwamish Waterway and Portland Harbor Superfund Sites
For Discussion September 30, 2014

Lower Duwamish Waterway	Portland Harbor
Study Area = ~5 RMs	Study Area = ~10 RMs
Marine, intertidal salt wedge estuary, riverine	Riverine, tidal, upstream dams
Source area = ~20,400 ac intensely developed	Source area = ~ 14,000 ac (w/~6,500 ac of forested open space)
24 SC Areas (roughly municipal subbasins) ~300 potential upland sites (8 EPA-led) (13 ECY led) (13 waiting for an available site manager) 7 EA sites	9 Geo-regions ~170 upland sites (4 EPA-led) 3 EA sites (+ RM 11E)
Ecology's Source Control Strategy (2004, 2012) – SC Action Plans for each SC Area (24) & development of SC Implementation Plans by multiple agencies	EPA/DEQ Joint Source Control Strategy 2005
Source Control Status Reports – 1 per year	Milestone Reports - bi-, then annual (2006 – 2013) Source Control Summary Report 2014
SC Priorities: High = before in-water remedy Med = concurrent w/ in-water remedy Low = as resources allow	SC Priorities: High = immediate risk, aggressive control Med = more investigation, control & elevate or demote Low = likely not significant, control as needed
14 CSOs in various stages of control (1 overflow/yr) using treatment & storage options; POTW pretreatment permits in CSO basins Separated stormwater: 8,900 acres, ~223 outfalls, ~100 industrial SW permittees; 4 MS4s	CSOs controlled (up to 4 overflows/yr) most diverted to POTW (Columbia), industrial separated in 1950s, ~600 ac separated storm to POTW 2011 ~400 OFs; 75 industrial SW permittees & 84 NECs; 4 MS4s
Channel dredged every 1-3 yrs + periodic dredging at up to 40 berths	Channel last dredged in 1980s (except PO Bar in 2010) and periodic dredging at a handful of Port and private berths
4 RAOs	8 RAOs
ROD 2014; ENR Pilot through 2020 SC schedule (uplands sites) projected out to 2025; SC sufficiency evaluations to occur after baseline (& RD) data collection	SC completion at ROD or RD/RA – 2016/2018
Upstream Watershed = 450 square miles (Green River) - Recontamination & MNR - Background: Natural BG (nonurban PS bays); Regional BG TBD	Upstream Watershed = 1,000s of sq. mi. (Downtown Reach & Upper Lower river) - Recontamination & MNR - Background: Site Specific (up river)
<u>PCBs</u> 220,000 ug/kg max, 1100 ug/kg mean - surface seds 890,000ug/kg max, 2000 ug/kg mean – subsurface seds 0.13 – 3.2 ng/L – water column (from Proposed Plan) <u>Dioxins (TEQ)</u> 2100 ng/kg max in surface seds (194 ng/kg max subsurface) 42 ng/kg mean in surface seds (17 ng /kg mean subsurface)	Surface sediment data presented, subsurface concentrations are in general higher <u>PCBs</u> 31,000 ug/kg max, 190 ug/kg mean (site-wide average) <u>Dioxins/Furans (TEQ)</u> 14,000 pg/g max 100 pg/g mean

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<p><u>cPAH (TEQ)</u> 11,000 ug/kg max surface seds 7,000 ug/kg max subsurface 459ug/kg mean surface seds 373 ug/kg mean subsurface</p> <p><u>As</u> 1,100 mg/kg max surface seds 2000 mg/kg max subsurface 17 mg/kg mean surface seds 29 mg/kg mean subsurface</p> <p><u>BEHP</u> 17,000 ug/kg max surface seds 590 ug/kg mean surface seds</p> <p>Plus 36 other COCs</p>	<p><u>DDx (total)</u> 23,000 ug/kg max 1,400 ug/kg mean</p> <p><u>PAHs</u> Free product and tar at surface from MGP operations</p> <p><u>As</u> 76 mg/kg max 4.7 mg/kg mean</p> <p><u>BEHP</u> 440,000 ug/kg max 9,600 ug/kg mean</p> <p><u>Lead</u> 13,000 mg/kg max 52 mg/kg mean</p> <p><u>TBT</u> 47,000 ug/kg max 610 ug/kg mean</p> <p>Plus other COCs</p> <p>Surface water – can summarize detections if important for discussion.</p>